

## SEQUENCE LISTING

<110> Ajinomoto Co., Inc.

<120> Novel Glutamic Acid Receptor and the Use Thereof

<130> C013-0P1435

<140> 2002-10-23

<150> JP 2001-325159

<151> 2001-10-23

<160> 8

<170> PatentIn Ver. 2.0

<210> 1

<211> 23

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: primer

<400> 1

gaagttagcgttcccgatgttact

23

<210> 2

<211> 23

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: primer

<400> 2

acagcgccaaatcacgaacgtcac

23

<210> 3

<211> 45

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: primer

<400> 3

ctaatacgac tcacatatagg gcaaggcagtg gtaacaacgc agagt

45

<210> 4

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: primer

<400> 4

ctaatacgac tcacatataagg gc

22

<210> 5

<211> 23

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: primer

<400> 5

aaggcagttt aacaacgcag agt

23

<210> 6

<211> 1755

<212> DNA

<213> Rattus norvegicus

<220>

<221> CDS

<222> (1)..(1755)

<400> 6

atg cca ggg gta tca tca tct ttg cca acg agg atg aca tca ggg ttc 48  
Met Pro Gly Val Ser Ser Leu Pro Thr Arg Met Thr Ser Gly Phe

1

5

10

15

gac	cga	iac	ttc	icc	agc	cgc	acg	cig	gac	aac	aac	agg	cgc	aac	atc	96
Asp	Arg	Tyr	Phe	Ser	Ser	Arg	Thr	Leu	Asp	Asn	Asn	Arg	Arg	Asn	Ile	
20								25							30	
tgg	ttt	gcc	gag	ttc	tgg	gag	gac	aac	ttc	cat	tgc	aag	ttg	agc	cgc	144
Trp	Phe	Ala	Glu	Phe	Trp	Glu	Asp	Asn	Phe	His	Cys	Lys	Leu	Ser	Arg	
35								40							45	
cac	gcg	cic	aag	aag	gga	agc	cac	atc	aag	aag	tgc	acc	aac	cga	gag	192
His	Ala	Leu	Lys	Lys	Gly	Ser	His	Ile	Lys	Lys	Cys	Thr	Asn	Arg	Glu	
50								55							60	
cgc	atc	ggg	cag	gac	tcg	gcc	tat	gag	cag	gag	ggg	aag	gtg	cag	ttc	240
Arg	Ile	Gly	Gln	Asp	Ser	Ala	Tyr	Glu	Gln	Glu	Gly	Lys	Val	Gln	Phe	
65								70							80	
gtg	att	gac	gtt	gtg	tac	gcc	atg	ggc	cac	gcg	cig	cac	gcc	atg	cac	288
Val	Ile	Asp	Ala	Val	Tyr	Ala	Met	Gly	His	Ala	Leu	His	Ala	Met	His	
85								90							95	
cgt	gac	cig	tgt	ccc	ggc	cgc	gta	gga	cic	tgc	cct	cgc	atg	gac	ccc	336
Arg	Asp	Leu	Cys	Pro	Gly	Arg	Val	Gly	Leu	Cys	Pro	Arg	Met	Asp	Pro	
100								105							110	
gtg	gat	ggc	acc	cag	ctg	ctt	aag	tac	atc	agg	aac	gtc	aac	ttc	tca	384
Val	Asp	Gly	Thr	Gln	Leu	Leu	Lys	Tyr	Ile	Arg	Asn	Val	Asn	Phe	Ser	
115								120							125	
ggc	att	gcg	ggg	aac	cct	gtt	acc	ttc	aat	gag	aac	gga	gac	gca	ccg	432
Gly	Ile	Ala	Gly	Asn	Pro	Val	Thr	Phe	Asn	Glu	Asn	Gly	Asp	Ala	Pro	
130								135							140	
ggc	cgc	iac	gac	atc	tac	cag	iac	caa	cig	cgc	aat	ggc	tcg	gcc	gag	480
Gly	Arg	Tyr	Asp	Ile	Tyr	Gln	Tyr	Gln	Leu	Arg	Asn	Gly	Ser	Ala	Glu	
145								150							160	
tac	aag	gtc	atc	ggc	tcg	tgg	aca	gac	cac	cig	cac	cic	aga	ata	gag	528
Tyr	Lys	Val	Ile	Gly	Ser	Trp	Thr	Asp	His	Leu	His	Leu	Arg	Ile	Glu	
165								170							175	
cgg	atg	cag	tgg	cca	ggg	agt	ggc	cag	cag	cig	ccg	cgc	tcc	atc	tgc	576
Arg	Met	Gln	Trp	Pro	Gly	Ser	Gly	Gln	Gln	Leu	Pro	Arg	Ser	Ile	Cys	
180								185							190	
agt	cig	ccc	tgc	cag	ccc	ggg	gag	cga	aag	aag	act	gtg	aag	ggc	atg	624
Ser	Leu	Pro	Cys	Gln	Pro	Gly	Glu	Arg	Lys	Lys	Thr	Val	Lys	Gly	Met	
195								200							205	
gct	tgc	tgc	tgg	cac	tgc	gag	ccc	tgc	acc	ggg	tac	cag	tac	caa	gtg	672
Ala	Cys	Cys	Trp	His	Cys	Glu	Pro	Cys	Thr	Gly	Tyr	Gln	Tyr	Gln	Val	
210								215							220	
gac	cgc	iac	acc	tgt	aag	acc	tgc	ccc	tac	gac	atg	cg	ccc	aca	gag	720
Asp	Arg	Tyr	Thr	Cys	Lys	Thr	Cys	Pro	Tyr	Asp	Met	Arg	Pro	Thr	Glu	
225								230							240	
aac	cgc	acg	agc	tgc	cag	ccc	atc	ccc	atc	gic	aag	ttg	gag	ttg	gac	768

Asn	Arg	Thr	Ser	Cys	Gln	Pro	Ile	Pro	Ile	Val	Lys	Leu	Glu	Trp	Asp	
																245
																250
																255
tcg	ccg	tgg	gcc	gtg	cgt	ccc	cic	ttc	cgt	gcc	gtg	gtg	ggc	atc	gcc	816
Ser	Pro	Trp	Ala	Val	Leu	Pro	Leu	Phe	Leu	Ala	Val	Val	Gly	Ile	Ala	
																260
																265
																270
gcc	acg	cgt	ttc	gtg	gtg	gtc	acg	ttt	gtg	cgc	tac	aac	gat	acc	ccc	864
Ala	Thr	Leu	Phe	Val	Val	Val	Thr	Phe	Val	Arg	Tyr	Asn	Asp	Thr	Pro	
																275
																280
																285
atc	gtc	aag	gcc	tcg	ggc	cg	gaa	ctg	agc	tac	gtg	cgt	cgt	g	gc	912
Ile	Val	Lys	Ala	Ser	Gly	Arg	Glu	Leu	Ser	Tyr	Val	Leu	Leu	Ala	Gly	
																290
																295
																300
atc	ttt	ctg	tgc	tac	gcc	act	acc	ttc	cic	atg	atc	gca	gag	ccg	gac	960
Ile	Phe	Leu	Cys	Tyr	Ala	Thr	Phe	Leu	Met	Ile	Ala	Glu	Pro	Asp		
																305
																310
																315
																320
ctg	ggg	acc	tgt	tcg	cic	cgc	cgc	atc	ttc	cgt	ggg	cic	ggc	atg	agc	1008
Leu	Gly	Thr	Cys	Ser	Leu	Arg	Arg	Ile	Phe	Leu	Gly	Leu	Gly	Met	Ser	
																325
																330
																335
atc	agc	tac	g	cc	ctg	cig	acc	aag	acc	aac	cgc	att	tac	cgc	atc	1056
Ile	Ser	Tyr	Ala	Ala	Leu	Leu	Thr	Lys	Thr	Asn	Arg	Ile	Tyr	Arg	Ile	
																340
																345
																350
ttt	gag	cag	ggc	aaa	cg	tcg	gtc	atg	gcc	ccg	cgt	ttc	atc	agc	ccg	1104
Phe	Glu	Gln	Gly	Lys	Arg	Ser	Val	Ser	Ala	Pro	Arg	Phe	Ile	Ser	Pro	
																355
																360
																365
gcc	tcg	cag	ctg	gcc	atc	acc	ttc	atc	cic	atc	ttc	ctg	cag	ctg	cic	1152
Ala	Ser	Gln	Leu	Ala	Ile	Thr	Phe	Ile	Leu	Ile	Ser	Leu	Gln	Leu	Leu	
																370
																375
																380
ggc	atc	tgc	gtg	tgg	ttc	gtg	gtg	gac	ccc	ttc	cac	tcg	gtg	gtg	gac	1200
Gly	Ile	Cys	Val	Trp	Phe	Val	Val	Asp	Pro	Ser	His	Ser	Val	Val	Asp	
																385
																390
																395
																400
ttc	cag	gac	caa	cg	aca	ctt	gac	ccc	cgc	ttt	gcc	agg	ggc	gtg	cic	1248
Phe	Gln	Asp	Gln	Arg	Thr	Leu	Asp	Pro	Arg	Phe	Ala	Arg	Gly	Val	Leu	
																405
																410
																415
aag	tgc	gac	atc	tcg	gac	cgt	ttc	cic	atc	tgc	cgt	ggc	tac	agc		1296
Lys	Cys	Asp	Ile	Ser	Asp	Leu	Ser	Leu	Ile	Cys	Leu	Leu	Gly	Tyr	Ser	
																420
																425
																430
atg	ctg	ctg	atg	gtc	acg	tgt	act	gtg	tac	gcc	atc	aag	acc	cga	ggc	1344
Met	Leu	Leu	Met	Val	Thr	Cys	Thr	Val	Tyr	Ala	Ile	Lys	Thr	Arg	Gly	
																435
																440
																445
gtg	ccc	gag	acc	ttc	aac	gag	gcc	aag	ccc	atc	ggc	ttc	acc	atg	tac	1392
Val	Pro	Glu	Thr	Phe	Asn	Glu	Ala	Lys	Pro	Ile	Gly	Phe	Thr	Met	Tyr	
																450
																455
																460
acc	acc	tgc	att	gtc	tgg	ctg	gcc	ttc	atc	ccc	atc	ttt	ttt	ggc	acc	1440
Thr	Thr	Cys	Ile	Val	Trp	Leu	Ala	Phe	Ile	Pro	Ile	Phe	Phe	Gly	Thr	

465	470	475	480	
tca cag tca gcc gac aag ctg tac atc cag aca acc aca ctg acg gtc				1488
Ser Gln Ser Ala Asp Lys Leu Tyr Ile Gln Thr Thr Thr Leu Thr Val				
485	490	495		
tcc gtg agt ctg agc gct tca gtg tcc ctg ggg atg ctc tac atg ccc				1536
Ser Val Ser Leu Ser Ala Ser Val Ser Leu Gly Met Leu Tyr Met Pro				
500	505	510		
aaa gtc tac atc atc ctc ttc cac ccg gag cag aac gtg ccc aag cgc				1584
Lys Val Tyr Ile Ile Leu Phe His Pro Glu Gln Asn Val Pro Lys Arg				
515	520	525		
aag cgc agt ctc aaa gcc gtg gtc acc gcc acc atg tcc aac aag				1632
Lys Arg Ser Leu Lys Ala Val Val Thr Ala Ala Thr Met Ser Asn Lys				
530	535	540		
ttc aca cag aag ggc aac ttc agg ccc aat ggg gaa gcc aaa tca gag				1680
Phe Thr Gln Lys Gly Asn Phe Arg Pro Asn Gly Glu Ala Lys Ser Glu				
545	550	555	560	
ctg tgt gag aac ctg gag acc cca gcg ctg gct acc aaa cag acc tac				1728
Leu Cys Glu Asn Leu Glu Thr Pro Ala Leu Ala Thr Lys Gln Thr Tyr				
565	570	575		
gtc acc tac acc aac cat gcc atc tag				1755
Val Thr Tyr Thr Asn His Ala Ile				
580	585			

<210> 7  
 <211> 584  
 <212> PRT  
 <213> Rattus norvegicus

<400> 7				
Met Pro Gly Val Ser Ser Ser Leu Pro Thr Arg Met Thr Ser Gly Phe				
1	5	10	15	
Asp Arg Tyr Phe Ser Ser Arg Thr Leu Asp Asn Asn Arg Arg Asn Ile				
20	25	30		
Trp Phe Ala Glu Phe Trp Glu Asp Asn Phe His Cys Lys Leu Ser Arg				
35	40	45		
His Ala Leu Lys Lys Gly Ser His Ile Lys Lys Cys Thr Asn Arg Glu				
50	55	60		
Arg Ile Gly Gln Asp Ser Ala Tyr Glu Gln Glu Gly Lys Val Gln Phe				
65	70	75	80	
Val Ile Asp Ala Val Tyr Ala Met Gly His Ala Leu His Ala Met His				
85	90	95		
Arg Asp Leu Cys Pro Gly Arg Val Gly Leu Cys Pro Arg Met Asp Pro				
100	105	110		

Val Asp Gly Thr Gln Leu Leu Lys Tyr Ile Arg Asn Val Asn Phe Ser  
 115 120 125  
 Gly Ile Ala Gly Asn Pro Val Thr Phe Asn Glu Asn Gly Asp Ala Pro  
 130 135 140  
 Gly Arg Tyr Asp Ile Tyr Gln Tyr Gln Leu Arg Asn Gly Ser Ala Glu  
 145 150 155 160  
 Tyr Lys Val Ile Gly Ser Trp Thr Asp His Leu His Leu Arg Ile Glu  
 165 170 175  
 Arg Met Gln Trp Pro Gly Ser Gly Gln Gln Leu Pro Arg Ser Ile Cys  
 180 185 190  
 Ser Leu Pro Cys Gln Pro Gly Glu Arg Lys Lys Thr Val Lys Gly Met  
 195 200 205  
 Ala Cys Cys Trp His Cys Glu Pro Cys Thr Gly Tyr Gln Tyr Gln Val  
 210 215 220  
 Asp Arg Tyr Thr Cys Lys Thr Cys Pro Tyr Asp Met Arg Pro Thr Glu  
 225 230 235 240  
 Asn Arg Thr Ser Cys Gln Pro Ile Pro Ile Val Lys Leu Glu Trp Asp  
 245 250 255  
 Ser Pro Trp Ala Val Leu Pro Leu Phe Leu Ala Val Val Gly Ile Ala  
 260 265 270  
 Ala Thr Leu Phe Val Val Val Thr Phe Val Arg Tyr Asn Asp Thr Pro  
 275 280 285  
 Ile Val Lys Ala Ser Gly Arg Glu Leu Ser Tyr Val Leu Leu Ala Gly  
 290 295 300  
 Ile Phe Leu Cys Tyr Ala Thr Thr Phe Leu Met Ile Ala Glu Pro Asp  
 305 310 315 320  
 Leu Gly Thr Cys Ser Leu Arg Arg Ile Phe Leu Gly Leu Gly Met Ser  
 325 330 335  
 Ile Ser Tyr Ala Ala Leu Leu Thr Lys Thr Asn Arg Ile Tyr Arg Ile  
 340 345 350  
 Phe Glu Gln Gly Lys Arg Ser Val Ser Ala Pro Arg Phe Ile Ser Pro  
 355 360 365  
 Ala Ser Gln Leu Ala Ile Thr Phe Ile Leu Ile Ser Leu Gln Leu Leu  
 370 375 380  
 Gly Ile Cys Val Trp Phe Val Val Asp Pro Ser His Ser Val Val Asp  
 385 390 395 400  
 Phe Gln Asp Gln Arg Thr Leu Asp Pro Arg Phe Ala Arg Gly Val Leu  
 405 410 415  
 Lys Cys Asp Ile Ser Asp Leu Ser Leu Ile Cys Leu Leu Gly Tyr Ser  
 420 425 430  
 Met Leu Leu Met Val Thr Cys Thr Val Tyr Ala Ile Lys Thr Arg Gly  
 435 440 445  
 Val Pro Glu Thr Phe Asn Glu Ala Lys Pro Ile Gly Phe Thr Met Tyr

450	455	460													
Thr	Thr	Cys	Ile	Val	Trp	Leu	Ala	Phe	Ile	Pro	Ile	Phe	Phe	Gly	Thr
465					470					475					480
Ser	Gln	Ser	Ala	Asp	Lys	Leu	Tyr	Ile	Gln	Thr	Thr	Thr	Leu	Thr	Val
															485
Ser	Val	Ser	Leu	Ser	Ala	Ser	Val	Ser	Leu	Gly	Met	Leu	Tyr	Met	Pro
															500
Lys	Val	Tyr	Ile	Ile	Leu	Phe	His	Pro	Glu	Gln	Asn	Val	Pro	Lys	Arg
															515
Lys	Arg	Ser	Leu	Lys	Ala	Val	Val	Thr	Ala	Ala	Thr	Met	Ser	Asn	Lys
															530
Phe	Thr	Gln	Lys	Gly	Asn	Phe	Arg	Pro	Asn	Gly	Glu	Ala	Lys	Ser	Glu
															545
Leu	Cys	Glu	Asn	Leu	Glu	Thr	Pro	Ala	Leu	Ala	Thr	Lys	Gln	Thr	Tyr
															565
Val	Thr	Tyr	Thr	Asn	His	Ala	Ile								
															580

<210> 8  
 <211> 14  
 <212> PRT  
 <213> Rattus norvegicus

<400> 8  
 Met Pro Gly Val Ser Ser Ser Leu Pro Thr Arg Met Thr Ser  
 1 5 10